Exhibit 300: Capital Asset Plan and Business Case Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview (All Capital Assets)

1. Date of Submission:	4/10/2009
2. Agency:	Department of Energy
3. Bureau:	Energy Programs
4. Name of this Capital Asset:	ORNL Leadership Computing Facility (OLCF)
5. Unique Project (Investment) Identifier: (For IT investment only, see section 53. For all other, use agency ID system.)	019-20-01-21-01-1031-00
6. What kind of investment will this be in FY 2010? (Please NOTE: Investments moving to O&M in FY 2010, with Planning/Acquisition activities prior to FY 2010 should not select O&M. These investments should indicate their current status.)	Mixed Life Cycle
7. What was the first budget year this investment was submitted to OMB?	FY2004

8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap:

The SC ORNL LCF (OLCF) is a mixed life-cycle investment to develop and operate increasingly higher performance computers to enable major advances in computational science as part of the DOE-ASCR LCF Program. The OLCF is intended for open, unclassified science research on capability-limited computational grand challenges and is made available to the scientific community primarily through DOE-SC's INCITE Program. The investment covers the operation of existing systems and the lease-to-own acquisition of more advanced systems and the effort and infrastructure needed to run them.

The OLCF Program is based on an evaluation of the near- and long-term needs of DOE-SC computational scientists which are derived from DOE strategic and tactical programmatic goals and from collaboration in algorithm and reusable code solutions with the general science community, e.g., DOE Energy Science researchers; DOE-SC collaborators; other federal agencies such as NASA, NIH, NSF; and university and industrial research collaborators. These wide-ranging collaborations directly support the President's 'Competitive' and 'American Energy' Initiatives. OLCF directly supports DOE's mission "to advance the national, economic and energy security of the United States; to promote scientific and technological innovation in support of that mission" Moreover, it satisfies DOE's Science Strategic Goal 3.1, Scientific Breakthroughs and all 7 of DOE-SC's Goals, especially #6 ("Deliver Computing for the Frontiers of Science") and #7 ("Provide the Resource Foundations that Enable Great Science"), by providing key leadership class computational capabilities and infrastructure required for US scientific innovation (as "Services for Citizens" (001109026) in "R&D" (002202069)). It maps directly to the BRM function of Scientific Research & Advanced Computational Science/Scientific Research

9. Did the Agency's Executive/Investment Committee approve this request?	Yes
a. If "yes," what was the date of this approval?	8/21/2008
10. Did the Project Manager review this Exhibit?	Yes
11. Contact information of Program/Project Manager?	
Name	Rawlins, Mary
Phone Number	865-576-4507
Email	rawlinsmh@ornl.gov
a. What is the current FAC-P/PM (for civilian agencies) or DAWIA (for defense agencies) certification level of the program/project manager?	Waiver Issued
b. When was the Program/Project Manager Assigned?	3/15/2006
c. What date did the Program/Project Manager receive the FAC-P/PM certification? If the certification has not been issued, what is the anticipated date for certification?	9/8/2009
12. Has the agency developed and/or promoted cost effective, energy-efficient and environmentally sustainable	Yes

techniques or practices for this project?

a. Will this investment include electronic assets (including computers)?	Yes
b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only)	No
1. If "yes," is an ESPC or UESC being used to help fund this investment?	
2. If "yes," will this investment meet sustainable design principles?	
3. If "yes," is it designed to be 30% more energy efficient than relevant code?	
13. Does this investment directly support one of the PMA initiatives?	Yes
If "yes," check all that apply:	R and D Investment Criteria Human Capital
a. Briefly and specifically describe for each selected how this asset directly supports the identified initiative(s)? (e.g. If E-Gov is selected, is it an approved shared service provider or the managing partner?)	This investment supports Human Capital and R&D Investment Criteria by using the existing ORNL infrastructure to facilitate scientists in achieving greater research synergies and scientific discovery through its incremental technical advancements and strategic partnerships with industry leaders (e.g. Cray and IBM) and other Federal agencies like NASA, NIH and NSF, providing cutting-edge technology that will attract the highest quality scientist to work on the grand challenges in energy science.
14. Does this investment support a program assessed using the Program Assessment Rating Tool (PART)? (For more information about the PART, visit www.whitehouse.gov/omb/part.)	Yes
a. If "yes," does this investment address a weakness found during a PART review?	Yes
b. If "yes," what is the name of the PARTed program?	10000074 - Advanced Scientific Computing Research
c. If "yes," what rating did the PART receive?	Moderately Effective
15. Is this investment for information technology?	Yes

If the answer to Question 15 is "Yes," complete questions 16-23 below. If the answer is "No," do not answer questions 16-23.

For information technology investments only:

16. What is the level of the IT Project? (per CIO Council PM Guidance)	Level 3
17. In addition to the answer in 11(a), what project management qualifications does the Project Manager have? (per CIO Council PM Guidance)	(1) Project manager has been validated as qualified for this investment
18. Is this investment or any project(s) within this investment identified as "high risk" on the Q4 - FY 2008 agency high risk report (per OMB Memorandum M-05-23)	Yes
19. Is this a financial management system?	No
a. If "yes," does this investment address a FFMIA compliance area?	
1. If "yes," which compliance area:	
2. If "no," what does it address?	

b. If "yes," please identify the system name(s) and system acronym(s) as reported in the most recent financial systems inventory update required by Circular A-11 section 52

20. What is the percentage breakout for the total FY2010 funding request for the following? (This should total 100%)

Hardware	48
Software	1
Services	25

Other	26
21. If this project produces information dissemination products for the public, are these products published to the Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities?	N/A

22. Contact information of individual responsible for privacy related questions:

Name	Quilty, Brian
Phone Number	865-576-3470
Title	Manager, Records Management Services
E-mail	quiltybj@ornl.gov
23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval?	Yes

Question 24 must be answered by all Investments:

24. Does this investment directly support one of the GAO High Risk Areas?	No

Section B: Summary of Spending (All Capital Assets)

1. Provide the total estimated life-cycle cost for this investment by completing the following table. All amounts represent budget authority in millions, and are rounded to three decimal places. Federal personnel costs should be included only in the row designated "Government FTE Cost," and should be excluded from the amounts shown for "Planning," "Full Acquisition," and "Operation/Maintenance." The "TOTAL" estimated annual cost of the investment is the sum of costs for "Planning," "Full Acquisition," and "Operation/Maintenance." For Federal buildings and facilities, life-cycle costs should include long term energy, environmental, decommissioning, and/or restoration costs. The costs associated with the entire life-cycle of the investment should be included in this report.

Table 1: SUMMARY OF SPENDING FOR PROJECT PHASES (REPORTED IN MILLIONS)
(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)

	PY-1 and earlier	PY 2008	CY 2009	BY 2010	BY+1 2011	BY+2 2012	BY+3 2013	BY+4 and beyond	Total
Planning:	0.833	0.924	0.757	0.5	0.75	0.75	0.5	0.5	5.514
Acquisition:	31.954	16.747	14.693	2	11.75	16.25	0.25	0.25	93.894
Subtotal Planning & Acquisition:	32.787	17.671	15.450	2.5	12.50	17.00	0.75	0.75	99.408
Operations & Maintenance:	170.719	67.045	69.55	92.5	82.5	78	94.25	94.25	748.814
TOTAL:	203.506	84.716	85.000	95.0	95.00	95.00	95.00	95.00	848.222
Government FTE Costs should not be included in the amounts provided above.									
Government FTE Costs	0.045	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.255
Number of FTE represented by Costs:	2	1	1	1	1	1	1	1	9

Note: For the multi-agency investments, this table should include all funding (both managing partner and partner agencies). Government FTE Costs should not be included as part of the TOTAL represented.

2. Will this project require the agency to hire additional FTE's?	No

a. If "yes," How many and in what year?

3. If the summary of spending has changed from the FY2009 President's budget request, briefly explain those changes:

The budget was adjusted down from $80M to $77M in FY07 and from $85M to $83.7M as a result of continuing resolutions and Congressional budget allocations.

Section C: Acquisition/Contract Strategy (All Capital Assets)

1. Complete the table for all (including all non-Federal) contracts and/or task orders currently in place or planned for this investment. Total Value should include all option years for each contract. Contracts and/or task orders completed do not need to be included.

Contracts/Task Orders Table: * Costs in millions

Contract or Task Order Number	Type of Contract/ Task Order (In accordance with FAR Part 16)	Has the contract been awarded (Y/N)	If so what is the date of the award? If not, what is the planned award date?	Start date of Contract/ Task Order	End date of Contract/ Task Order	Total Value of Contract/ Task Order ($M)	Is this an Interagency Acquisition? (Y/N)	Is it performance based? (Y/N)	Competitively awarded? (Y/N)	What, if any, alternative financing option is being used? (ESPC, UESC, EUL, N/A)	Is EVM in the contract? (Y/N)	Does the contract include the required security & privacy clauses? (Y/N)	Name of CO	CO Contact information (phone/email)	Contracting Officer FAC-C or DAWIA Certification Level (Level 1, 2, 3, N/A)	If N/A, has the agency determined the CO assigned has the competencies and skills necessary to support this acquisition? (Y/N)
DE-AC05-00OR22725	Cost Reimbursement	Yes	4/1/2005	4/1/2005	3/31/2010	248.908	No	Yes	Yes	NA	Yes	Yes	Million, Mark	865-576-7814 / millionma@oro.doe.gov	Level 3	
4000037567	Firm Fixed Price /LTO	Yes	2/1/2005	2/1/2005	12/1/2013	238.314	No	Yes	Yes	NA	No	Yes	Million, Mark	865-576-7814 / millionma@oro.doe.gov	Level 3	
	Cost Reimbursement	Yes	4/1/2010			360	No	Yes	Yes	NA	Yes	Yes	Million, Mark	865-576-7814 / millionma@oro.doe.gov	Level 3	

2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:

Contracts DE-AC05-00OR22725 and its extension (# t.b.d.), represent the Prime Contract for the entire Laboratory. The WBS for the DME portion of the LCF investment is managed by an integrated project team that employs trained cost account managers and change control procedures. The SC ORNL LCF Project Director submits quarterly EVM reports along with operational analysis of the steady state investment to the assigned DOE Program Manager. ORNL deploys an ANSI/EIA-748 certifiable EVM system, for DME activities, that is integrated into ORNL's SAP and Primavera management systems. The DOE uses a performance-based management approach to manage LCF through an ongoing process of establishing strategic performance objectives; measuring performance; collecting, analyzing, reviewing, and reporting performance data; and using that data to drive performance improvement. Contract performance is managed in accordance with Department of Energy Order 224.1, Contractor Performance-Based Business Management Process, dated 12/8/1997, which requires Departmental elements to regularly assess and evaluate contractor performance, controls, and compliance. Self-assessments are the primary tool used at all levels to assess and evaluate results and to improve performance. Through adherence to DOE Order 224.1, ORNL integrates contract work scope, budget, and schedule to achieve realistic, executable performance plans, compliant with EVM System Industry Standard (ANSI/EIA-748). The program is reviewed at least annually to ensure that its management, technologies, and capabilities adequately meet the requirements of its mission, as defined by its community of users and its sponsors. External peer review is a driving force in the development and implementation of the program. Reviews are conducted on both a routine and an extraordinary basis as critical program issues arise. The latest review was chaired by Dan Lehman (DOE Project Management office) in February, 2008.
Contract 4000037567 is for the Lease-to-Own computer systems. It is performance-based in that OLCF will pay only if the delivered systems meet performance goals. EVM is not implemented as the contract is not activity-based.

3. Do the contracts ensure Section 508 compliance?	Yes
a. Explain why not or how this is being done?	The LCF complies with the DOE policy on Section 508 through the use of appropriate contractor's requirements documents. The Contracting Officer (CO) or CO Technical Representative (COTR), ensures that statements of work include Section 508 technical standards and that all IT acquisitions provide the greatest possible degree of compliance with Section 508 technical standards (36 CFR 1194.21-1194.26, 1194.31, 1194.41) while satisfying other functional requirements.
4. Is there an acquisition plan which reflects the requirements of FAR Subpart 7.1 and has been approved in accordance with agency requirements?	Yes
a. If "yes," what is the date?	4/18/2008
1. Is it Current?	Yes
b. If "no," will an acquisition plan be developed?	
1. If "no," briefly explain why:	

Section D: Performance Information (All Capital Assets)

In order to successfully address this area of the exhibit 300, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures (indicators) must be provided. These goals need to map to the gap in the agency's strategic goals and objectives this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60 percent, increase citizen participation by 300 percent a year to achieve an overall citizen participation rate of 75 percent by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module, milestones, or investment, or general goals, such as, significant, better, improved that do not have a quantitative or qualitative measure.

Agencies must use the following table to report performance goals and measures for the major investment and use the Federal Enterprise Architecture (FEA) Performance Reference Model (PRM). Map all Measurement Indicators to the corresponding "Measurement Area" and "Measurement Grouping" identified in the PRM. There should be at least one Measurement Indicator for each of the four different Measurement Areas (for each fiscal year). The PRM is available at www.egov.gov. The table can be extended to include performance measures for years beyond the next President's Budget.

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
2007	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results. Results are measured on a scale of 1-5. Average in FY06 was 3.51 over 13 questions of which 5 were nelow the average	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period.	The goal was met for all 5 of the questions that scored below 3.51. The new average for all questions was 3.91 and the average for the 5 questions was 3.93.

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	the Nation s energy, national security, and environmental quality challenges.							
2007	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Timeliness and Responsiveness	Delivery Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average of 2 Business Hours	Average response time was 1.2 hours during FY07.
2007	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Productivity	Productivity	% of scheduled time that system is available to users	75%	Improve to 80%	The system was available 95.3% of the time during FY07.
2007	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Efficiency	Technology Improvement	Computing capability	50 TF (peak)	Improve to 100 TF	This milestone achieved for FY07, 119 TF (peak)
2008	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period.	Survey is taken annually in Q1 of following FY - On track to achieve goal.
2008	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to	Customer Results	Timeliness and Responsiveness	Delivery Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average	Current average is 1.73 hours - On track to achieve goal.

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	the Nation s energy, national security, and environmental quality challenges.							
2008	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	CPU hours allocated	75M hours	Increase available hours to 120M (calendar 2008 allocation)	About 145 M hours were made available for use.
2008	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Productivity	Productivity	Expansion Factor for capability jobs. XF is a ratio describing job throughput efficiency; XF = (job que wait time + Job run time)/Job run time. Smaller is better and HPC facilities typically run at about 20.	18	Sustain 18	Achieved about 6.1
2008	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Productivity	Productivity	% of scheduled time that system is available to users	0.8	Sustain 85%	Achieved about 95%
2008	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Efficiency	Technology Improvement	Computing capability	119 TF (peak)	Improve to 250 TF (peak)	Achieved 263TF target exceeded by 5%
2009	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period.	Available Q1 FY10

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	to the Nation s energy, national security, and environmental quality challenges.							
2009	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Timeliness and Responsiveness	Delivery Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average	Average to date is 1.6 hours. On track to achieve goal.
2009	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	CPU hours allocated	120M hours allocated	Increase available hours to 170M (calendar 2009 allocation)	Allocations are on a calendar year cycle. January results are about 14.7M hours. On track to meet performance goals.
2009	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Productivity	Productivity	Expansion Factor for capability jobs. XF is a ratio describing job throughput efficiency; XF = (job que wait time + Job run time)/Job run time. Smaller is better and HPC facilities typically run at about 20.	18	Sustain 18	Worst performance to-date is an expansion factor of approximately 6.5, well below target. On track to meet performance goals.
2009	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Productivity	Productivity	% of scheduled time that system is available to users	85%	Sustain 85%	Currently running about 90% availability. On track to meet performance goals.
2009	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to	Technology	Efficiency	Accessibility				

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	the Nation s energy, national security, and environmental quality challenges.							
2010	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period.	Available in Q1 FY2011
2010	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Timeliness and Responsiveness	Response Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average	Available in Q1 FY2011
2010	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	CPU hours allocated	170M hours allocated	Increase available hours to 900M (calendar 2010 allocation)	Available in Q1 FY2011
2010	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Quality	Complaints	Expansion Factor for capability jobs. XF is a ratio describing job throughput efficiency; XF = (job que wait time + Job run time)/Job run time. Smaller is better and HPC facilities typically run at about 20	18	Reduce to 15	Available in Q1 FY2011
2010	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to	Technology	Efficiency	Technology Improvement				

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	the Nation s energy, national security, and environmental quality challenges.							
2010	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Reliability and Availability	Reliability	% of scheduled time that system is available to users	85%	Sustain 85%	Available in Q1 FY2011
2011	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period.	Available in Q1 FY2012
2011	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Timeliness and Responsiveness	Response Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average	Available in Q1 FY2012
2011	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	CPU hours allocated	900M hours allocated	Increase available hours to 1200M (calendar 2011 allocation)	Available in Q1 FY2012
2011	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to	Processes and Activities	Productivity	Productivity				

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	the Nation s energy, national security, and environmental quality challenges.							
2011	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Efficiency	Technology Improvement				
2011	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Reliability and Availability	Reliability	% of scheduled time that system is available to users	85%	Sustain 85%	Available in Q1 FY2012
2012	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period.	Available in Q1 FY2013
2012	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Timeliness and Responsiveness	Response Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average	Available in Q1 FY2013
2012	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	CPU hours allocated	1200M hours allocated	Sustain available hours at 1200M (calendar 2012 allocation)	Available in Q1 FY2013

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	the Nation s energy, national security, and environmental quality challenges.							
2012	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Productivity	Productivity				
2012	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Efficiency	Technology Improvement				
2012	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Reliability and Availability	Reliability	% of scheduled time that system is available to users	85%	Sustain 85%	Available in Q1 FY2013
2013	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period	Available in Q1 FY2014
2013	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to	Customer Results	Timeliness and Responsiveness	Response Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average	Available in Q1 FY2014

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	the Nation s energy, national security, and environmental quality challenges.							
2013	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	CPU hours allocated	1200M hours allocated	Increase available hours to 6000M (calendar 2013 allocation)	Available in Q1 FY2014
2013	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Productivity	Productivity				
2013	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Efficiency	Technology Improvement				
2013	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Reliability and Availability	Reliability	% of scheduled time that system is available to users	85%	Sustain 85%	Available in Q1 FY2014
2014	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches	Customer Results	Customer Benefit	Customer Satisfaction	Satisfaction as determined through user survey	Previous year s survey results	Annual user survey results show improvement in at least 1/3 of questions that scored below average in previous period.	Available in Q1 FY2015

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	to the Nation s energy, national security, and environmental quality challenges.							
2014	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches to the Nation s energy, national security, and environmental quality challenges.	Customer Results	Timeliness and Responsiveness	Response Time	Time between receipt of user query (RT ticket) and initial response, in Business Hours	Average response time of 2 Business Hours	Sustain or improve overall response time average	Available in Q1 FY2015
2014	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	CPU hours allocated	6000M hours allocated	Sustain available hours at 6000M (calendar 2014 allocation)	Available in Q1 FY2015
2014	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Processes and Activities	Quality	Complaints	Expansion Factor for capability jobs. XF is a ratio describing job throughput efficiency; XF = (job que wait time + Job run time)/Job run time. Smaller is better and HPC facilities typically run at about 20.	15	Sustain 15	Available in Q1 FY2015
2014	GOAL 3.1 Scientific Breakthroughs - Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation s energy, national security, and environmental quality challenges.	Technology	Efficiency	Technology Improvement				
2014	GOAL 3.1 Scientific Discovery Achieve the major scientific discoveries that will drive U.S. competitiveness, inspire America, and revolutionize our approaches	Technology	Reliability and Availability	Reliability	% of scheduled time that system is available to users	85%	Sustain 85%	Available in Q1 FY2015

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	to the Nation s energy, national security, and environmental quality challenges.							

Section E: Security and Privacy (IT Capital Assets only)

In order to successfully address this area of the business case, each question below must be answered at the system/application level, not at a program or agency level. Systems supporting this investment on the planning and operational systems security tables should match the systems on the privacy table below. Systems on the Operational Security Table must be included on your agency FISMA system inventory and should be easily referenced in the inventory (i.e., should use the same name or identifier).

For existing Mixed-Life Cycle investments where enhancement, development, and/or modernization is planned, include the investment in both the "Systems in Planning" table (Table 3) and the "Operational Systems" table (Table 4). Systems which are already operational, but have enhancement, development, and/or modernization activity, should be included in both Table 3 and Table 4. Table 3 should reflect the planned date for the system changes to be complete and operational, and the planned date for the associated C&A update. Table 4 should reflect the current status of the requirements listed. In this context, information contained within Table 3 should characterize what updates to testing and documentation will occur before implementing the enhancements; and Table 4 should characterize the current state of the materials associated with the existing system.

All systems listed in the two security tables should be identified in the privacy table. The list of systems in the "Name of System" column of the privacy table (Table 8) should match the systems listed in columns titled "Name of System" in the security tables (Tables 3 and 4). For the Privacy table, it is possible that there may not be a one-to-one ratio between the list of systems and the related privacy documents. For example, one PIA could cover multiple systems. If this is the case, a working link to the PIA may be listed in column (d) of the privacy table more than once (for each system covered by the PIA).

The questions asking whether there is a PIA which covers the system and whether a SORN is required for the system are discrete from the narrative fields. The narrative column provides an opportunity for free text explanation why a working link is not provided. For example, a SORN may be required for the system, but the system is not yet operational. In this circumstance, answer "yes" for column (e) and in the narrative in column (f), explain that because the system is not operational the SORN is not yet required to be published.

Please respond to the questions below and verify the system owner took the following actions:

1. Have the IT security costs for the system(s) been identified and integrated into the overall costs of the investment?:

a. If "yes," provide the "Percentage IT Security" for the budget year:

2. Is identifying and assessing security and privacy risks a part of the overall risk management effort for each system supporting or part of this investment?

3. Systems in Planning and Undergoing Enhancement(s), Development, and/or Modernization - Security Table(s):			
Name of System	**Agency/ or Contractor Operated System?**	**Planned Operational Date**	**Date of Planned C&A update (for existing mixed life cycle systems) or Planned Completion Date (for new systems)**
NCCS (1PF)			
NCCS (20PF)			

4. Operational Systems - Security Table:							
Name of System	**Agency/ or Contractor Operated System?**	**NIST FIPS 199 Risk Impact level (High, Moderate, Low)**	**Has C&A been Completed, using NIST 800-37? (Y/N)**	**Date Completed: C&A**	**What standards were used for the Security Controls tests? (FIPS 200/NIST 800-53, Other, N/A)**	**Date Completed: Security Control Testing**	**Date the contingency plan tested**
National Center for Computational Sciences (NCCS synonymous with OLCF)							

5. Have any weaknesses, not yet remediated, related to any of the systems part of or supporting this investment been identified by the agency or IG?

a. If "yes," have those weaknesses been incorporated into the agency's plan of action and milestone process?

6. Indicate whether an increase in IT security funding is requested to remediate IT security weaknesses?

a. If "yes," specify the amount, provide a general description of the weakness, and explain how the funding request will remediate the weakness.

7. How are contractor security procedures monitored, verified, and validated by the agency for the contractor systems above?

The NCCS meets FISMA, OMB & NIST requirements. The NCCS follows the ORNL Cyber Security Program Plan and includes a NCCS enclave supplement detailing the roles and responsibilities of users, staff, management, authorization and authentication, configuration management, continuous monitoring, intrusion detection, vulnerability scanning, Incident Prevention, Warning, Advisory and Response (IPWAR), training and other required areas. The NCCS team includes computer security analysts who design, develop, and oversee NCCS operations to ensure ORNL/DOE policy compliance. Cyber security roles and responsibilities are included in position descriptions with periodic updates to performance standards. The NCCS team and ORNL Cyber Security Group work in tandem with the Security Steering Committee to continuously review security controls and assess risks to adapt policies and practices to effectively respond to evolving threats.

8. Planning & Operational Systems - Privacy Table:

(a) Name of System	(b) Is this a new system? (Y/N)	(c) Is there at least one Privacy Impact Assessment (PIA) which covers this system? (Y/N)	(d) Internet Link or Explanation	(e) Is a System of Records Notice (SORN) required for this system? (Y/N)	(f) Internet Link or Explanation
NCCS	No	No	The system does not contain, process or transmit personal identifying information.	No	The system is not a Privacy Act system of records.
NCCS (1PF)	No	No	The system does not contain, process or transmit personal identifying information.	No	The system is not a Privacy Act system of records.
NCCS (20PF)	No	No	The system does not contain, process or transmit personal identifying information.	No	The system is not a Privacy Act system of records.

Details for Text Options:
Column (d): If yes to (c), provide the link(s) to the publicly posted PIA(s) with which this system is associated. If no to (c), provide an explanation why the PIA has not been publicly posted or why the PIA has not been conducted.

Column (f): If yes to (e), provide the link(s) to where the current and up to date SORN(s) is published in the federal register. If no to (e), provide an explanation why the SORN has not been published or why there isn't a current and up to date SORN.

Note: Working links must be provided to specific documents not general privacy websites. Non-working links will be considered as a blank field.

Section F: Enterprise Architecture (EA) (IT Capital Assets only)

In order to successfully address this area of the capital asset plan and business case, the investment must be included in the agency's EA and Capital Planning and Investment Control (CPIC) process and mapped to and supporting the FEA. The business case must demonstrate the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's EA.

1. Is this investment included in your agency's target enterprise architecture?	Yes
a. If "no," please explain why?	
2. Is this investment included in the agency's EA Transition Strategy?	Yes
a. If "yes," provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment.	Office of Science, ORNL Leadership Computing Facility (LCF)
b. If "no," please explain why?	
3. Is this investment identified in a completed and approved segment architecture?	No
a. If "yes," provide the six digit code corresponding to the agency segment architecture. The segment architecture codes are maintained by the agency Chief Architect. For detailed guidance regarding segment architecture codes, please refer to	115-000

http://www.egov.gov.

4. Service Component Reference Model (SRM) Table:
Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to http://www.egov.gov.

Agency Component Name	Agency Component Description	FEA SRM Service Domain	FEA SRM Service Type	FEA SRM Component (a)	Service Component Reused Name (b)	Service Component Reused UPI (b)	Internal or External Reuse? (c)	BY Funding Percentage (d)
Computer Center Management	Resources to perform management of computing facility.	Back Office Services	Asset / Materials Management	Computers / Automation Management			No Reuse	6
Data Management	Supports the archiving and storage of large volumes of data.	Back Office Services	Data Management	Data Warehouse			No Reuse	6
High Performance Coumputational Services	Software to perform mathematical and statistical calculations	Business Analytical Services	Analysis and Statistics	Mathematical			No Reuse	2
High Performance Computation	Support of scientific research. This is the fundamental reason for the investment.	Business Analytical Services	Knowledge Discovery	Simulation			No Reuse	58
Data Analytics	Resources that support the creation of film or electronic images from pictures, paper forms or graphics for static or dynamic use.	Business Analytical Services	Visualization	Imagery			No Reuse	3
Help Desk	On-line help application	Customer Services	Customer Initiated Assistance	Self-Service			No Reuse	12
		Support Services	Security Management				No Reuse	1
Data Management	Supports the balance and allocation of memory, usage, disk space and performance on computers and their applications	Support Services	Systems Management	System Resource Monitoring			No Reuse	12

a. Use existing SRM Components or identify as "NEW". A "NEW" component is one not already identified as a service component in the FEA SRM.

b. A reused component is one being funded by another investment, but being used by this investment. Rather than answer yes or no, identify the reused service component funded by the other investment and identify the other investment using the Unique Project Identifier (UPI) code from the OMB Ex 300 or Ex 53 submission.

c. 'Internal' reuse is within an agency. For example, one agency within a department is reusing a service component provided by another agency within the same department. 'External' reuse is one agency within a department reusing a service component provided by another agency in another department. A good example of this is an E-Gov initiative service being reused by multiple organizations across the federal government.

d. Please provide the percentage of the BY requested funding amount used for each service component listed in the table. If external, provide the percentage of the BY requested funding amount transferred to another agency to pay for the service. The percentages in the column can, but are not required to, add up to 100%.

5. Technical Reference Model (TRM) Table:
To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component (a)	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification (b) (i.e., vendor and product name)
Computers / Automation Management	Component Framework	Data Management	Database Connectivity	
System Resource Monitoring	Component Framework	Data Management	Reporting and Analysis	
System Resource Monitoring	Component Framework	Data Management	Reporting and Analysis	
Imagery	Component Framework	User Presentation / Interface	Content Rendering	
Imagery	Component Framework	User Presentation / Interface	Content Rendering	

5. Technical Reference Model (TRM) Table:
To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component (a)	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification (b) (i.e., vendor and product name)
Imagery	Component Framework	User Presentation / Interface	Content Rendering	
Imagery	Component Framework	User Presentation / Interface	Content Rendering	
Self-Service	Service Access and Delivery	Access Channels	Collaboration / Communications	
Self-Service	Service Access and Delivery	Delivery Channels	Internet	
	Service Access and Delivery	Service Requirements		
Self-Service	Service Access and Delivery	Service Requirements	Hosting	
Data Warehouse	Service Platform and Infrastructure	Database / Storage	Storage	
Mathematical	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	
Simulation	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	
Mathematical	Service Platform and Infrastructure	Software Engineering	Integrated Development Environment	
Mathematical	Service Platform and Infrastructure	Software Engineering	Integrated Development Environment	
Computers / Automation Management	Service Platform and Infrastructure	Support Platforms	Dependent Platform	

a. Service Components identified in the previous question should be entered in this column. Please enter multiple rows for FEA SRM Components supported by multiple TRM Service Specifications

b. In the Service Specification field, agencies should provide information on the specified technical standard or vendor product mapped to the FEA TRM Service Standard, including model or version numbers, as appropriate.

6. Will the application leverage existing components and/or applications across the Government (i.e., USA.gov, Pay.Gov, etc)? No

a. If "yes," please describe.

Exhibit 300: Part II: Planning, Acquisition and Performance Information

Section A: Alternatives Analysis (All Capital Assets)

Part II should be completed only for investments identified as "Planning" or "Full Acquisition," or "Mixed Life-Cycle" investments in response to Question 6 in Part I, Section A above.

In selecting the best capital asset, you should identify and consider at least three viable alternatives, in addition to the current baseline, i.e., the status quo. Use OMB Circular A-94 for all investments and the Clinger Cohen Act of 1996 for IT investments to determine the criteria you should use in your Benefit/Cost Analysis.

1. Did you conduct an alternatives analysis for this project? Yes

a. If "yes," provide the date the analysis was completed? 8/27/2007

b. If "no," what is the anticipated date this analysis will be completed?

c. If no analysis is planned, please briefly explain why:

2. Alternative Analysis Results: * Costs in millions

Use the results of your alternatives analysis to complete the following table:

Alternative Analyzed	Description of Alternative	Risk Adjusted Lifecycle Costs estimate	Risk Adjusted Lifecycle Benefits estimate

3. Which alternative was selected by the Agency's Executive/Investment Committee and why was it chosen?

Based on a peer-reviewed competition, the Office of Science awarded the Leadership Class Computing facility to the partnership of ORNL, ANL and PNNL on May 12, 2004. This review established the approach of employing Cray systems (at ORNL) and IBM Blue Gene systems (at ANL) to optimally span the wide range of science requirements. This two-site approach also substantially reduces the risk to the program should one of the sites go off line for an extended period. Benefits are also derived from avoiding the higher costs of commercial hosting of the computer(s) which would include a profit incentive.

The lifecycle window used to determine the Total Project Cost for this IT investment comprises fiscal years 2008, 2009, 2010, and 2011.

a. What year will the investment breakeven? (Specifically, when the budgeted costs savings exceed the cumulative costs.) 2010

4. What specific qualitative benefits will be realized?

The science thrusts of DOE employ a wide range of computational algorithms requiring capability computing. Different computing architectures have different strengths with respect to the algorithms currently in popular use. A key strength of the LCF Program approach is the ability of diverse Leadership Computing systems to each efficiently address capability-limited computations in different science areas of the DOE portfolio more economically than a single computer architecture. With the addition of the leadership class Cray XT Series computers at ORNL, DOE science fills a large gap in computer and data storage resource requirements with strong capabilities to accelerate scientific understanding in areas that include energy systems, life sciences, environmental stewardship, and fundamental science. This is an important step in achieving 2006 DOE Strategic Goal 3.1 for Scientific Breakthroughs, which requires us to "Advance the computational sciences and the leadership class computational capabilities required for today's frontiers of scientific discovery" and DOE-SC Stragetig Goal 6.4, "Provide computing resources at the petascale and beyond, network infrastructure, and tools to enable computational science and scientific collaboration

5. Federal Quantitative Benefits

What specific quantitative benefits will be realized (using current dollars) Use the results of your alternatives analysis to complete the following table:

	Budgeted Cost Savings	Cost Avoidance	Justification for Budgeted Cost Savings	Justification for Budgeted Cost Avoidance
PY - 1 2007 & Prior			Does not apply to R&D-based High Performance Computers that utilize unique and cutting edge technologies	Sunk costs no benefit calculated
PY 2008			Does not apply to R&D-based High Performance Computers that utilize unique and cutting edge technologies	The difference between NPV of Alt #2 and Alt #1. Since these costs are same in this year, the differnce is $0
CY 2009			Does not apply to R&D-based High Performance Computers that utilize unique and cutting edge technologies	The difference between NPV of Alt #2 and Alt #1. Since these costs are same in this year, the differnce is $0
BY 2010			Does not apply to R&D-based High Performance Computers	The difference between NPV of Alt #2 and Alt #1.

5. Federal Quantitative Benefits
What specific quantitative benefits will be realized (using current dollars) Use the results of your alternatives analysis to complete the following table:

	Budgeted Cost Savings	Cost Avoidance	Justification for Budgeted Cost Savings	Justification for Budgeted Cost Avoidance
			that utilize unique and cutting edge technologies	
BY + 1 2011			Does not apply to R&D-based High Performance Computers that utilize unique and cutting edge technologies	The difference between NPV of Alt #2 and Alt #1.
BY + 2 2012			Does not apply to R&D-based High Performance Computers that utilize unique and cutting edge technologies	Outside anlaysis window no benefit calculated
BY + 3 2013			Does not apply to R&D-based High Performance Computers that utilize unique and cutting edge technologies	Outside anlaysis window no benefit calculated
BY + 4 2014 & Beyond			Does not apply to R&D-based High Performance Computers that utilize unique and cutting edge technologies	Outside anlaysis window no benefit calculated
Total LCC Benefit			LCC = Life-cycle Cost	

6. Will the selected alternative replace a legacy system in-part or in-whole? No

a. If "yes," are the migration costs associated with the migration to the selected alternative included in this investment, the legacy investment, or in a separate migration investment?

b. If "yes," please provide the following information:

5b. List of Legacy Investment or Systems

Name of the Legacy Investment of Systems	UPI if available	Date of the System Retirement

Section B: Risk Management (All Capital Assets)

You should have performed a risk assessment during the early planning and initial concept phase of this investment's life-cycle, developed a risk-adjusted life-cycle cost estimate and a plan to eliminate, mitigate or manage risk, and be actively managing risk throughout the investment's life-cycle.

1. Does the investment have a Risk Management Plan? Yes

a. If "yes," what is the date of the plan? 8/1/2008

b. Has the Risk Management Plan been significantly changed since last year's submission to OMB? No

c. If "yes," describe any significant changes:

2. If there currently is no plan, will a plan be developed?

a. If "yes," what is the planned completion date?

b. If "no," what is the strategy for managing the risks?

3. Briefly describe how investment risks are reflected in the life cycle cost estimate and investment schedule:

Risks are mitigated by reaching the computing capability goal through an incremental upgrade path using an existing HPC facility and infrastructure base. The major increments are reflected in the schedule and budget for the LCF Project. Q1 FY09 is the estimated availability date for Cray's computing platform utilizing the AMD multi-core CPU chip set that will provide the proposed 1 or more PF capability. Rather than simply waiting until that time for a single delivery of that platform and the associated software and storage hardware to install, configure, and test for 1 PF capability, the incremental approach allows ORNL to test those components and connections that are available well before this date. Early testing of a significant portion of the components provides time to solve problems or find alternatives that should reduced risk of cost and/or schedule impact on the whole project. The cost of installing and testing the quad-core chips and several other components used. Each of thee major delivery dates include a planned schedule contingency of 3 months to cover risks of late delivery of essential hardware or software components from ADM, Cray, or the storage device manufacturers. Another aspect of risk management is the use of firm fixed-price (FFP) lease agreements with Cray. FFP contracts shift much of the cost risk for delivering the required capability onto the manufacturers, but is reflected in higher up-front costs to the investment life-cycle funding. These amounts were determined by top-down expert opinion of the senior project managers and validated by standard techniques such as bottom-up Pert analysis from expert opinion and historical information.

Section C: Cost and Schedule Performance (All Capital Assets)

EVM is required only on DME portions of investments. For mixed lifecycle investments, O&M milestones should still be included in the table (Comparison of Initial Baseline and Current Approved Baseline). This table should accurately reflect the milestones in the initial baseline, as well as milestones in the current baseline.

1. Does the earned value management system meet the criteria in ANSI/EIA Standard-748?	Yes
2. Is the CV% or SV% greater than +/- 10%? (CV%= CV/EV x 100; SV%= SV/PV x 100)	No

a. If "yes," was it the CV or SV or both?

b. If "yes," explain the causes of the variance:

The acquisition activities did not cost as much as planned.

c. If "yes," describe the corrective actions:

The variance will be rectified in the implementation phase.

3. Has the investment re-baselined during the past fiscal year?	Yes
a. If "yes," when was it approved by the agency head?	2/21/2008

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
1	FY05 SS Installation of 18TF platform	9/30/2005	$73.328000	9/30/2005	9/30/2005	$73.328000	$73.328000	0	$0.000000	100%
2	FY05 DME 18TF Acceptance Milestone	9/30/2005	$0.000000	9/30/2005	9/30/2005	$0.000000	$0.000000	0	$0.000000	100%
3	FY06 DME Project Management - Planning	9/30/2006	$0.010000	9/30/2006	9/30/2006	$0.010000	$0.010000	0	$0.000000	100%
4	FY06 DME Hardware Acquisition	9/30/2006	$0.560000	9/30/2006	9/30/2006	$0.560000	$0.560000	0	$0.000000	100%
5	FY06 DME 25TF Acceptance Milestone	12/1/2005	$0.000000	12/1/2005	12/1/2005	$0.000000	$0.000000	0	$0.000000	100%
6	FY06 DME 50TF Acceptance Milestone	7/1/2006	$0.000000	7/1/2006	7/1/2006	$0.000000	$0.000000	0	$0.000000	100%
7	FY06 SS Operations (O&M)	9/30/2006	$52.613000	9/30/2006	9/30/2006	$52.613000	$52.613000	0	$0.000000	100%
8	FY07 DME Site Prep	9/30/2007	$3.178000	9/30/2007	9/30/2007	$3.721000	$4.351000	0	-$0.630000	100%
9	FY07 DME Hardware Acquisition	9/30/2007	$0.878000	9/30/2007	9/30/2007	$1.208000	$0.701000	0	$0.507000	100%
10	FY07 DME Computer Acceptance Prep Activities	9/30/2007	$0.435000	9/30/2007	9/30/2007	$0.779000	$0.473000	0	$0.306000	100%
11	FY07 DME Computer Acceptance Activities	9/30/2007	$0.318000	9/30/2007	9/30/2007	$0.294000	$0.303000	0	-$0.009000	100%
12	FY07 DME 100TF Acceptance Milestone	2/15/2007	$0.000000	2/28/2007	2/15/2007	$0.000000	$0.000000	13	$0.000000	100%
13	FY07 DME Project Management - Planning	9/30/2007	$0.498000	9/30/2007	9/30/2007	$0.555000	$0.828000	0	-$0.273000	100%
14	FY07 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2007	$0.368000	9/30/2007	9/30/2007	$0.445000	$0.255000	0	$0.190000	100%
15	FY07 DME Project R&D	9/30/2007	$1.124000	9/30/2007	9/30/2007	$0.697000	$0.476000	0	$0.221000	100%
16	FY07 DME Project Management Contingency Reserve	9/30/2007	$2.117000	9/30/2007	9/30/2007	$0.000000	$0.000000	0	$0.000000	100%
17	FY07 DME Hardware Lease Payments	9/30/2007	$27.142000	9/30/2007	9/30/2007	$24.835000	$24.835000	0	$0.000000	100%
18	FY07 SS Hardware Lease Payments	9/30/2007	$14.685000	9/30/2007	9/30/2007	$13.702000	$13.702000	0	$0.000000	100%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
19	FY07 SS Operations (O&M)	9/30/2007	$29.247000	9/30/2007	9/30/2007	$30.754000	$31.066000	0	-$0.312000	100%
20	FY07 SS Security Test Milestone	9/30/2007	$0.010000	9/30/2007	9/30/2007	$0.010000	$0.010000	0	$0.000000	100%
21	FY08 DME Site Prep	9/30/2008	$3.192000	9/30/2008	9/30/2008	$8.522000	$7.753000	0	$0.769000	100%
22	FY08 DME Hardware Acquisition	9/30/2008	$0.417000	9/30/2008	9/30/2008	$0.888000	$1.019000	0	-$0.131000	100%
23	FY08 DME Computer Acceptance Prep Activities	9/30/2008	$1.026000	9/30/2008	9/30/2008	$1.242000	$0.637000	0	$0.605000	100%
24	FY08 DME Computer Acceptance Activities	9/30/2008	$0.289000	9/30/2008	9/30/2008	$0.342000	$0.196000	0	$0.146000	100%
25	FY08 DME NCCS (250TF) Acceptance Milestone	9/30/2008	$0.000000	9/30/2008	2/21/2008	$0.000000	$0.000000	222	$0.000000	100%
26	FY08 DME Project Management - Planning	9/30/2008	$0.516000	9/30/2008	9/30/2008	$0.779000	$0.924000	0	-$0.145000	100%
27	FY08 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2008	$0.371000	9/30/2008	9/30/2008	$0.526000	$0.263000	0	$0.263000	100%
28	FY08 DME Project Management Contingency Reserve	9/30/2008	$1.645000	9/30/2008	9/30/2008	$0.000000		0		100%
29	FY08 DME Project R&D	9/30/2008	$0.960000	9/30/2008	6/30/2008	$0.522000	$0.331000	92	$0.191000	100%
30	FY08 DME Hardware Lease Payments	4/30/2008	$14.376000	4/30/2008	9/30/2008	$6.549000	$6.549000	-153	$0.000000	100%
31	FY08 SS Hardware Lease Payments	9/30/2008	$10.683000	9/30/2008	9/30/2008	$18.315000	$18.315000	0	$0.000000	100%
32	FY08 SS Operations (O&M)	9/30/2008	$46.515000	9/30/2008	9/30/2008	$47.022000	$48.720000	0	-$1.698000	100%
33	FY08 SS Security Test Milestone	9/30/2008	$0.010000	9/30/2008	9/30/2008	$0.010000	$0.010000	0	$0.000000	100%
34	FY09 DME Site Prep	9/30/2009	$3.211000	9/30/2009	2/28/2009	$1.666000	$2.154000	214	-$0.488000	100%
35	FY09 DME Hardware Acquisition	9/30/2009	$0.598000	3/12/2009	2/6/2009	$3.515000	$0.095000	34	$3.420000	100%
36	FY09 DME Computer Acceptance Prep Activities	9/30/2009	$3.000000	9/30/2009	2/3/2009	$0.185000	$0.233000	239	-$0.048000	100%
37	FY09 DME Computer	9/30/2009	$0.500000	9/30/2009	2/4/2009	$0.351000	$0.132000	238	$0.219000	100%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
	Acceptance Prep Activities									
38	FY09 DME NCCS (1PF) Acceptance Milestone	9/30/2009	$0.000000	9/30/2009	12/29/2008	$0.000000	$0.000000	275	$0.000000	100%
39	FY09 DME Project Management - Planning	9/30/2009	$0.757000	9/30/2009	2/28/2009	$0.757000	$0.394000	214	$0.363000	100%
40	FY09 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2009	$0.449000	9/30/2009	2/28/2009	$0.449000	$0.014000	214	$0.435000	100%
41	FY09 DME Project Management Contingency Reserve	9/30/2009	$1.903000	9/30/2009	2/28/2009	$0.000000	$0.000000	214	$0.000000	100%
42	FY09 DME Project R&D	9/30/2009	$0.164000	9/30/2009	10/1/2008	$0.164000	$0.007000	364	$0.157000	100%
43	FY09 DME Hardware Lease Payments	6/30/2009	$10.732000	6/30/2009	12/31/2008	$7.711000	$7.711000	181	$0.000000	100%
44	FY09 SS Hardware Lease Payments	9/30/2009	$27.035000	9/30/2009		$23.289000	$12.215000		-$4.529630	33%
45	FY09 SS Operations (O&M)	9/30/2009	$39.657000	9/30/2009		$46.903000	$13.813000		$1.664990	33%
46		9/30/2009	$0.010000	9/30/2009		$0.010000	$0.000000		$0.000000	0%
47	FY10 DME Project Management - Planning	9/30/2010	$0.500000	9/30/2010		$0.500000	$0.000000		$0.000000	0%
48	FY10 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2010	$0.250000	9/30/2010		$0.250000	$0.000000		$0.000000	0%
49	FY10 DME Computer Acceptance Prep Activities	9/30/2010	$1.750000	9/30/2010		$1.750000	$0.000000		$0.000000	0%
50	FY10 DME Hardware Lease Payments	9/30/2010	$0.000000	9/30/2010		$0.000000	$0.000000		$0.000000	0%
51	FY10 SS Hardware Lease Payments	9/30/2010	$42.000000	9/30/2010		$42.000000	$0.000000		$0.000000	0%
52	FY10 SS Operations (O&M)	9/30/2010	$50.490000	9/30/2010		$50.490000	$0.000000		$0.000000	0%
53		9/30/2010	$0.010000	9/30/2010		$0.010000	$0.000000		$0.000000	0%
54	FY11 DME Site Prep	9/30/2011	$5.000000	9/30/2011		$5.000000	$0.000000		$0.000000	0%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
55	FY11 DME Project Management - Planning	9/30/2011	$0.750000	9/30/2011		$0.750000	$0.000000		$0.000000	0%
56	FY11 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2011	$0.500000	9/30/2011		$0.500000	$0.000000		$0.000000	0%
57	FY11 DME Computer Acceptance Prep Activities	9/30/2011	$0.750000	9/30/2011		$0.750000	$0.000000		$0.000000	0%
58	FY11 DME Computer Acceptance Activities	9/30/2011	$0.500000	9/30/2011		$0.500000	$0.000000		$0.000000	0%
59	FY11 DME NCCS (20PF) Acceptance Milestone	9/30/2011	$0.000000	9/30/2011		$0.000000	$0.000000		$0.000000	0%
60	FY11 DME Hardware Lease Payments	9/30/2011	$5.000000	9/30/2011		$5.000000	$0.000000		$0.000000	0%
61	FY11 SS Hardware Lease Payments	9/30/2011	$31.000000	9/30/2011		$31.000000	$0.000000		$0.000000	0%
62	FY11 SS Operations (O&M)	9/30/2011	$51.490000	9/30/2011		$51.490000	$0.000000		$0.000000	0%
63		9/30/2011	$0.010000	9/30/2011		$0.010000	$0.000000		$0.000000	0%
64	FY12 DME Computer Acceptance Prep Activities	9/30/2012	$2.000000	9/30/2012		$2.000000	$0.000000		$0.000000	0%
65	FY12 DME Project Management - Planning	9/30/2012	$0.750000	9/30/2012		$0.750000	$0.000000		$0.000000	0%
66	FY12 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2012	$0.750000	9/30/2012		$0.750000	$0.000000		$0.000000	0%
67	FY12 DME Hardware Lease Payments	9/30/2012	$12.000000	9/30/2012		$12.000000	$0.000000		$0.000000	0%
68	FY12 DME Computer Acceptance Activities	9/30/2012	$1.500000	9/30/2012		$1.500000				0%
69	FY12 SS Hardware Lease Payments	9/30/2012	$26.471000	9/30/2012		$26.471000	$0.000000		$0.000000	0%
70	FY12 SS Operations (O&M)	9/30/2012	$51.519000	9/30/2012		$51.519000	$0.000000		$0.000000	0%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
71		9/30/2012	$0.010000	9/30/2012		$0.010000				0%
72	FY13 DME Project Management - Planning	9/30/2013	$0.500000	9/30/2013		$0.500000	$0.000000		$0.000000	0%
73	FY13 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2013	$0.250000	9/30/2013		$0.250000	$0.000000		$0.000000	0%
74	FY13 DME Hardware Lease Payments	9/30/2013	$0.000000	9/30/2013		$0.000000	$0.000000		$0.000000	0%
75	FY13 SS Hardware Lease Payments	9/30/2013	$40.000000	9/30/2013		$40.000000	$0.000000		$0.000000	0%
76	FY13 SS Operations (O&M)	9/30/2013	$54.240000	9/30/2013		$54.240000	$0.000000		$0.000000	0%
77		9/30/2013	$0.010000	9/30/2013		$0.010000	$0.000000		$0.000000	0%
78	FY14 DME Project Management - Planning	9/30/2014	$0.500000	9/30/2014		$0.500000	$0.000000		$0.000000	0%
79	FY14 DME Project Management - Risk & Change, Mgmt, QA, ESH, Reporting	9/30/2014	$0.250000	9/30/2014		$0.250000	$0.000000		$0.000000	0%
80	FY14 DME NCCS (20PF) Acceptance Milestone	9/30/2014	$0.000000	9/30/2014		$0.000000	$0.000000		$0.000000	0%
81	FY14 DME Hardware Lease Payments	9/30/2014	$0.000000	9/30/2014		$0.000000	$0.000000		$0.000000	0%
82	FY14 SS Hardware Lease Payments	9/30/2014	$38.000000	9/30/2014		$38.000000	$0.000000		$0.000000	0%
83	FY14 SS Operations (O&M)	9/30/2014	$56.240000	9/30/2014		$56.240000	$0.000000		$0.000000	0%
84		9/30/2014	$0.010000	9/30/2014		$0.010000	$0.000000		$0.000000	0%
Project Totals		**9/30/2014**	**$849.527000**	**9/30/2014**	**2/28/2009**	**$848.228000**	**$324.996000**	**2040**	**$1.232489**	**38.46%**